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AUTHORITY

ago d/a, ltr, 29 apr 1980

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DEPARTMENT OF THE ARMY
OFFICE OF THE ADJUTANT GENERAL
WASHINGTON, D.C. 20310

IN REPLY REFER TO

AGAM-P (M) (18 Jul 69) FOR OT UT 692087

29 July 1969

SUBJECT: Operational Report - Lessons Learned, Headquarters, 84th Engineer Battalion, Period Ending 30 April 1969

AD855900

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2. Information contained in this report is provided to insure appropriate benefits in the future from lessons learned during current operations and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

Kenneth G. Wickham

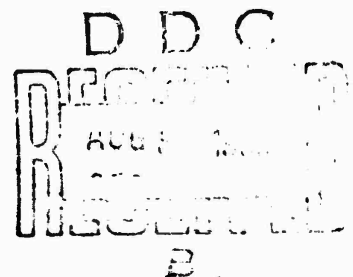
KENNETH G. WICKHAM
Major General, USA
The Adjutant General

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(ARMY) ATTN FOR OT UT. WASHINGTON, D.C. 20310

DEPARTMENT OF THE ARMY
HEADQUARTERS, 84TH ENGINEER BATTALION (CONSTRUCTION)
APO 96238

EGCC-CO

14 May 1969

SUBJECT: Operational Report of the 84th Engineer Battalion
(Construction) for the period ending 30 April 1969, RCS
CSFOR-65 (R1)

THRU: Commanding Officer
937th Engineer Group (Combat)
APO 96318

Commanding General
18th Engineer Brigade
ATTN: AVBC-C
APO 96377

Commanding General
United States Army Vietnam
ATTN: AVHGC-DST
APO 96375

Commander in Chief
United States Army, Pacific
ATTN: GPOP-DT
APO 96558

TO: Assistant Chief of Staff for Force Development
Department of the Army (ACSFOR-DA)
Washington, D.C. 20310

FOR OT UT
692087
Inclosure

EDCC-00

14 May 1969

SUBJECT: Operational Report of the 84th Engineer Battalion
(Construction) for the Period Ending 30 April 1969, RCS
CSFOR-65 (RL)

1. Section 1 Significant Organizations or Unit Activities:

a. Command:

(1) Organization:

- (a) Headquarters & Headquarters Company, 84th Engr Bn (Const)
- (b) Company A, 84th Engr Bn (Const)
- (c) Company B, 84th Engr Bn (Const)
- (d) Company C, 84th Engr Bn (Const)
- (e) Company D, 84th Engr Bn (Const)
- (f) 536th Engr Det (PC)

(g) Company B, 299th Engr Bn (Combat)

Under OPCON of this Headquarters since 1 April 1969.

(h) Ad Hoc Power Distribution Team Assigned to HHC/84th

(i) 2nd Plt, 643rd Engr Co (PL)

Disbanded on 25 January 1969 and its personnel reassigned to units of the Battalion.

(2) Unit Operations:

(a) Headquarters & Headquarters Company: The utilities section continued to maintain the Camp Williams Cantonment area; this section was augmented with Vietnamese laborers as required. Under the control of HHC, the Ad Hoc Power Distribution Team was primarily utilized on the Cha Rang Valley Power Distribution Project and the Security Lighting of Lane AAF. Neither project has been completed as of this report due to the scope of work and late arrival of materials necessary for completion.

(b) Company A had the responsibility for the maintenance and repair of Battalion Ordnance and Engineer equipment. This company also operated the Howell Quarry and Crusher Complex until 1 April 1969, thereafter moving to the Chóp Chai Quarry and Crusher Complex located at Tuy Hoa North. The move was accomplished smoothly and expeditiously, as testified by the fact that the new complex was in production by 13 April 1969. During this reporting period the aggregate production of both Quarries was 17,667 CY of crushed rock, used in support of LOC Projects. Road maintenance projects utilized 5,795 GAL of MC-70 and 550.2 TONS of hot mix, mainly on QL-19; operational support type projects for roadways, taxiways, Tank Farms, and Helipads utilized 11,980 GAL of MC-70 and 2,650 GAL of Penesprime.

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(c) Company B was mainly involved in the construction of their new cantonment area at Miami Beach (CQ104783), completed by 15 March 1969, and the upgrading of QL-1 between Tuy An (CQ105687) and Tuy Hoa (CQ174448). This unit was also tasked with the maintenance of QL-1 between Binh Thanh (CRO58014) and Tuy Hoa (CQ17448). This company moved over 80,000 CY of fill and poured 200 C of concrete for new culverts in the road projects assigned to it.

(d) Company C concentrated its efforts on base construction type projects within the Qui Nhon Area, operating a prefab yard to build Standard Tropical Buildings and MACV Shelters and preparing concrete bridge markers. The 440'x 80' Cold Storage Warehouse is 90% complete, the Tandem Switch Building was completed with the exception of the surrounding revetment, and Class II & IV Warehouse is approximately 35% complete, with steel framework and trusses erected on the Nicheman Building. The Depot Warehouse and Administrative Space was completed and turned over to the Installation Commander. The POW Hospital being built by a construction platoon from Company D attached to Company C, is approximately 60% complete. This Company also had responsibility for the maintenance of QL-1 from Phu Tai (CRO05210) to Phu Cat (BR907486) and of QL-19 from QL-1 (BR984333) to the An Khe Pass (BR619470); this responsibility was transferred to the 299th Engr Bn (C) on 15 April 1969. At that time, company effort shifted to the upgrading of QL-1 between Phu Tai and Binh Thanh (CR 058014), with emphasis on the Cu Mong Pass Area (CRO42114); two new MCA D-9 dozers from Company A were attached to Company C for this project, as were two squads from Company B, 299th Engr Bn (C). Operational Support Mission for Tank Farms #1, 2 and 3, as well as Pump Station #2 were completed; these missions involved berms, chain link fencing, six fill stands and two access roads. Finally, this company constructed and buried the second half of the "B" Pipeline along Red Beach and Vung Chua Road with personnel acquired from the disbanded 2 Plt, 643rd Engr Co (PL).

(e) Company D moved to Tuy Hoa North (CQ152484) on 15 April 1969 and started constructing the cantonment areas (TOB's and MER's) for itself and for Company A. This company initially had responsibility for the maintenance of QL-1 from Phu Tai to Phu Cat and of QL-19 from QL-1 to the An Khe Pass; this responsibility was later transferred to the 299th Engr Bn (C), and the responsibility for QL-1 from Binh Thanh to Tuy Hoa acquired. The main effort, though, was on road upgrading between Tuy An (CQ105687) and Tuy Hoa (CQ174448), where some 37,000 CY of fill were hauled, together with 175 CY of concrete for 5 new culverts, and between Binh Thanh (CR 058014) and Phu Tai (CRO05210) later transferred to Company C. Base construction was performed by Detachments to Company C: one Platoon worked at Cold Storage Warehouse and another at POW Hospital.

(f) The 536th Engr Det. (PC) was principally working on the Armo Off-Loading Facility and repairing the existing Barge Quay; both projects are part of Qui Nhon Harbor System. The Former is 46% completed and the Latter 45%.

(g) Company B, 299th Engr Bn (C) was placed under the Operational Control of the Battalion on 1 April 1969, and utilized its manpower and resources in two major projects. The first project was the Operational Support of the 1st Logistical Command in the Qui Nhon Area, which entailed the construction of

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4 bunkers, 3 guard towers, and 3 fill stands in Tank Farms #1, 2 & 3, as well as the ABD, Qui Nhon Area. The second project was the upgrade of QL-1, Phu Tai to Binh Thanh through drainage facilities; in this project B/299th placed 12 culverts, including 1-quad 48" and 1-quad 60".

b. Personnel, Administration, Morale and Discipline: During this reporting period the troop participation in the Savings Bond Program averaged 66.1%, while Soldiers' Deposits participation averaged 5.7%. There was a total of 45 personnel recommended for awards, and 118 personnel voluntarily extended their foreign service tours. This Battalion suffered eight casualties and one battle death during this Quarter. There were 124 disciplinary cases, 85 Article 15's, 29 Special Courts-Martial, and 10 Summary Courts-Martial.

c. Intelligence and Counterintelligence: Enemy activity against LOC's remained moderate, resulting in two bridges being destroyed by enemy action. The explosives utilized were locally made, and apparently command detonated. Enemy harassment of work crews for the reporting period can be classified as moderate, with four incidents resulting in one grader, one quarter-ton vehicle and one three-quarter-ton vehicle damaged, one man KIA and four WIA. There were no incidents of enemy action against base camps of this Battalion; however, the Battalion supported the 134th QM Company with two dozers, one front loader and eight 5-ton dump trucks when sappers penetrated Tank Farm #2. This action resulted in major damage to the Tank Farm. Mining of LOC's remained moderate during this reporting period, with a total of nine mining incidents, two of which were located by friendly mine sweeps. Under the threat of an expected enemy spring campaign, good intelligence continued to be maintained by this unit with the Capital ROK Infantry Division, 22nd ARVN Infantry Division, 5th Special Forces Group, 173rd Airborne Brigade, Binh Dinh and Phu Yen Province Forces, MACV Tuy Hoa, and other combat and combat support units in the Battalion's AOR.

d. Plans, Operations, and Training: This reporting period saw the construction effort being shifted from base construction to road upgrade: at the beginning of the period only one company, B/84th, was engaged in road construction, whereas at the closing of the reporting period all companies were so engaged. The major projects are QL-1 Upgrade, Phu Tai to Binh Thanh (assigned to Company C), and QL-1 Upgrade, Tuy An to Tuy Hoa (assigned to Company B and Company D, with support from Company A). All companies are responsible for LOC maintenance in the Battalion's AOR, from Binh Thanh To Vung Ro. Base construction, mainly in the Qui Nhon Area, is being done by Company C, with attachments from Companies D and B. Training emphasis during this reporting period was on the OJT/Cross-Training of newly assigned personnel, as well as on the weapons safety training conducted each Sunday morning for all newly assigned personnel.

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e. Logistics: During the past Quarter, the S-4 section gave logistical support to the five organic companies of the 84th Engineer Battalion (Construction), its attached unit, the 536th Engr Det (FC), and Company B, 299th Engineer Battalion (Combat), under the operational control of this battalion since 1 April 1969. The areas of logistical support included:

(1) Class A rations for some 1,000 personnel each day, procured and distributed by the ration break down facility.

(2) Two (2) water points which together produce approximately 40,000 gal of potable water daily.

(3) POL delivery to all organic and attached units amounting to 37,000 gal of Mogas and 42,000 gal of diesel fuel per month.

(4) Supply of Class IV Construction Materials to all units for MCA funded projects. An average of 350 requisitions for construction materials are processed each week by the BOM section of S-4.

(5) Supply of Class II TOE equipment. An average of 150 requisitions for expendable and non-expendable equipment and supplies are processed by the property book section each week. The Quarter showed an influx of 176 new pieces of equipment, both TOE and MCA.

(6) Resupply of unit basic loads and demolitions through the Phu Tai ASP. An average of 10,000 lb of TNT are used each month for quarry operations.

f. Force Development: N/A

g. Command Management: N/A

h. Inspector General: N/A

i. Civic Action: During this reporting period, the 84th Engineer Battalion (Construction) distributed \$VN 196,000 among various orphanages in Qui Nhon, An Khe and Tuy Hoa. This money was used to hire teachers, maintain water heaters and generators, and for further use at the discretion of the institutions' directors. The monies were donated by the personnel of this Battalion. \$VN 4,210 was obtained from the Qui Nhon Support Command Chaplain's Fund and further distributed by the Battalion Chaplain among charitable organizations. As part of the daily civic action program within the 84th Engineer Battalion (Construction), the following scrap materials were distributed to various orphanages, schools and refugee centers in the Qui Nhon Area: 152 broken cement bags, 4,200 bf of lumber,

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CSFOR-65 (RL)

20 gal of paint, 100 cy of 3"(-) crushed rock, and 30 pieces of 18" CMP.
Expenditures from US/FWMAF Military Civic Action were \$VN 84,000 during
this period, spent in the Qui Nhon area orphanages.

2. Section 2: Observations (Lessons Learned)

a. Personnel: None

b. Operations:

(1) Item: The tendency to "overbuild" when widening a road through
rice paddy areas.

(a) Observation: While doing road work on QL-1, a tendency to
"overbuild" existed when widening the road through rice paddy areas.

(b) Evaluation: Without close supervision road width
will not stay within allowable standards.

(c) Recommendation: Road width must be closely monitored
during all phases of construction to insure that excessive widening is
kept to a minimum.

(2) Item: Making efficient use of mobile scaffolds when Cherry
pickers and Cranes aren't available.

(a) Observation: In constructing a 24' high fence around
fuel tanks at the Tank Farms, a problem was encountered since the majority
of the construction effort was expended 24' above ground.

(b) Evaluation: A substitute for Cherry Pickers and Cranes
had to be found so that the project deadline could be met.

(c) Recommendation: The problem was alleviated by constructing
a 16' high standard scaffold on the bed of a 5 ton dump truck.

(3) Item: Improvising snap ties for wales on building columns.

(a) Observation: While building a framework for 2' x 2' x 7'-6"
reinforced concrete columns, it was discovered that snap ties for the
wales were not available.

(b) Evaluation: A method of securing the wales had to be
found so that work on the project could continue.

(c) Recommendation: Engineer pickets cut to the proper
length and drilled to receive No 4 re-bar can serve as an adequate
substitute.

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(4) Item: Finding an expedient method for loading culvert onto a lowboy trailer.

(a) Observation: While waiting to load a 72"x38' culvert, it became apparent that an unnecessary delay would occur because of the absence of adequate lifting equipment.

(b) Evaluation: To avoid a two hour delay, an adequate substitute had to be found so that the culvert could be promptly loaded on the lowboy.

(c) Recommendation: A D7-E dozer and 290 M scraper were used. The 290 M scraper was parked parallel to the lowboy on one side, while the D7-E dozer pushed the culvert onto the lowboy.

(5) Item: Placing of weep hole tubes through headwall and running back into culvert for improved drainage.

(a) Observation: While placing a headwall for one of the culverts on QL-1 South, the headwall was approximately 75 feet in from the edge of the mountain, thereby leaving soil on both sides of the headwall.

(b) Evaluation: The problem was how to make the weep hole tubes more effective in draining the roadbed.

(c) Recommendation: The problem was solved by running the weep hole tubes through the headwall from the compacted roadbed side and then bending them into the top of the culvert.

(6) Item: The use of K-Wall revetments around a permanent installation.

(a) Observation: While constructing K-Wall revetments, problems arose when installation was started on an uneven base.

(b) Evaluation: While constructing K-Wall revetments, problems arose concerning how to best fasten sections and properly align the revetment.

(c) Recommendation: Great care and consideration must be given to site preparation, to insure that revetment rest on a graded and level base.

(7) Item: The prefabrication of the corner pieces for a bulkhead wall of ZP type shootpile.

(a) Observation: Since the corner pieces for a bulkhead wall are not usually manufactured, the constructing unit must make them. Furthermore, while cutting the sheepling to make these corner pieces, the heat from the cutting torch warps the piles and makes a straight edge difficult to obtain.

(b) Evaluation: The corner pieces for the bulkhead wall must be free of warps in order to obtain a straight joint.

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(c) Recommendation: The problem can be eliminated by cutting the sheetpiling at intervals of about six inches with an inch or so left between each interval. These inch sections prevent piling from warping. The remaining sections can then be cut with little effort on the piling.

(8). Item: Placing Bench and Swedge Bolts in Abutment

(a) Observation: Bench and front face forms could not be placed before pouring concrete up to bench level because the face width was not wide enough to place a chute to within 5' of the footer.

(b) Evaluation: Concrete would be poured up to bench level, then the bench and face form would be placed and braced before the face would be poured without the use of a chute.

(c) Recommendations:

(1) Prefab the bench and face forms so that holes are drilled where the swedge bolts will go. Have the form placed at the site where it will be easy to place and brace the bench and frontface forms.

(2) Pour concrete to bench level and smooth bench with trowel. Place face form, then bench form. Place bolts into the drilled holes in the bench and anchor the bolts to the form with tie wire. It is important to get the bolts placed as quickly as possible because cement sets quickly in this climate.

(3) Place tie wire and spacers in the face forms, then brace the bench and face forms.

(9). Item: Placing rebar into forms where a large amount of concrete will be poured.

(a) Observation: Cutting and placing rebar at the job site led to poor workmanship. The people placing the rebar found themselves working at close quarters and climbing on the rebar causing the rebar to sag and bend.

(b) Evaluation: Prefabing the rebar structure then transporting it to the work site in large pieces allowed workers enough working room and eliminated the placing rebar being climbed on while the rebar was tied together.

(c) Recommendations:

(1) Prefab rebar structures as much as feasible before placing.

(2) Place only three sides of concrete form before placing rebar. After placing rebar, the fourth side of the form can be placed and braced and tie wire added.

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SUBJECT: Operational Report of the 84th Engineer Battalion (Construction)
for the Period Ending 30 April 1969, RCS CSFOR-65 (R1)

- c. Training: None
- d. Intelligence: None
- e. Logistics: None
- f. Organization: None
- g. Other: None

William Y. Epling
WILLIAM Y. EPLING
LTC, CE
Commanding

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EGC-OP (30 April 69) 1st Ind

SUBJECT: Operational Report of the 84th Engineer Battalion (Const) for the
Period Ending 30 April 1969 (RCS-CSFOR-65)

DA, HEADQUARTERS, 937TH ENGINEER GROUP (COMBAT), APO 96318, 22 May 1969

TO: Commanding General, 18th Engineer Brigade, ATTN: AVBC-CS, APO 96377

1. The Operational Report - Lessons Learned of the 84th Engineer Battalion (Construction) has been reviewed by this headquarters and is considered to be an excellent account of the 84th Engineer Battalion's activities during the reporting period ending 30 April 1969.

2. This headquarters concurs with all the observations and recommendations of the Battalion Commander.

W.G. KRATZ
COLONEL, CE
Commanding

AVBC-IX (30 April 1969) 2nd Ind

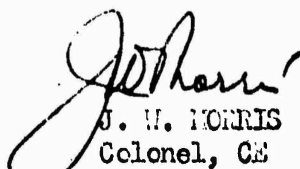
SUBJECT: Operational Report of the 84th Engineer Battalion (Construction)
for the Period Ending 30 April 1969, RCS CSFOR-65 (R1)

DA, Headquarters, 18th Engineer Brigade, AIC 96377 6 JUN 1969

TO: Commanding General, U.S. Army Vietnam, ATTN: AVHGC-DST, APO 96375

1. This headquarters has reviewed the Operational Report - Lessons Learned for the 84th Engineer Battalion (Construction) as indorsed by the 937th Engineer Group (Combat). The report is considered to be an excellent account of the Battalion's activities for the reporting period.

2. This headquarters concurs with the observations and recommendations of the Battalion and Group Commanders.


J. W. MORRIS
Colonel, CE
Commanding

CF: CO, 937th Engr Gp
CO, 84th Engr Bn

AVHGC-DST (14 May 69) 3d Ind

SUBJECT: Operational Report of the 84th Engineer Battalion (Construction)
for the period ending 30 April 1969, RCS CSFOR--65 (R1)

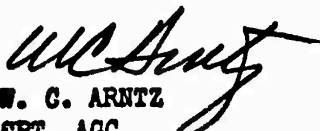
HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96375 19 JUN 1969

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT,
APO 96558

This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 30 April 1969 from Headquarters, 84th Engineer Battalion (Construction) and concurs with the report as indorsed.

FOR THE COMMANDER:

Cy furn:
84th Engr Bn
18th Engr Bde


W. C. ARNTZ
CPT, AGC
Assistant Adjutant General

GPOP-DT (14 May 69) 4th Ind

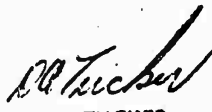
SUBJECT: Operational Report of HQ, 84th Engr Bn (Const) for Period
Ending 30 April 1969, RCS CSFOR-65 (R1)

HQ, US Army, Pacific, APO San Francisco 96558 5 JUL 69

TO: Assistant Chief of Staff for Force Development, Department of the
Army, Washington, D. C. 20310

This headquarters has evaluated subject report and forwarding indorse-
ments and concurs in the report as indorsed.

FOR THE COMMANDER IN CHIEF:



D. A. TUCKER
CPT. AGC
ASST AG

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CO, 84th Engineer Battalion

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13. ABSTRACT